

Weekly Report

05/06/2019 – 10/06/2019

Last week, I tried to think about reverse engineering about Data2Video. I tried to extract the characteristic of video, especially sports video, based on this paper "GameViews: Understanding and Supporting Data-driven Sports Storytelling" [1] and then derived it to represent in the timeline. That paper can let the user select the specified points of scoring, and then the video will present that moment. I will be derived this concept to match with other data not only sports video.

One more idea from the paper "Stack Zooming for Multi-Focus Interaction in Time-Series Data Visualization". This idea is suited for financial data. At the priority, I am focusing on economic data to visualize as the video. This paper presents the stack zooming for line graphs. User can focus on a period changes in the main timeline, and the selected timeline will be zoomed and arrange like treemap.

About this idea, I had discussed with Junhua that if we use the financial time series data draw like a timeline and let the user select the period that the user needs to emphasize, then expand the timeline with zooming technique and run that period slowly. Regardless, it seems like any video editing program can do. So, I have to eliminate this concept.

One more survey paper [3] that I catch up with more useful knowledge about how to represent the visual narrative flow. This week I plan to read this paper deeply to catch up some idea.

Back to narrative structure topic, the beginning of the last week, I try to map a video editing technique (zooming, slow, and stop) with a narrative structure that extracts to tree narrative structure [4]. I read the previous citation of that paper, and I found the article "(Pea)nuts and bolts of visual narrative: Structure and meaning in sequential image comprehension" [5], that mentioned more detail about how the people comprehend the sequential image. After talked with Junhua, he suggested me to try to match that tree narrative structure to other data (not only for financial data).

[1] Zhi, Q., Lin, S., Talkad Sukumar, P., & Metoyer, R. (2019). GameViews: Understanding and Supporting Data-driven Sports Storytelling. Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19, 1–13. <https://doi.org/10.1145/3290605.3300499>

[2] Javed, W., & Elmqvist, N. (2013). Stack zooming for multi-focus interaction in skewed-aspect visual spaces. IEEE Transactions on Visualization and Computer Graphics, 19(8), 1362–1374. <https://doi.org/10.1109/TVCG.2012.323>

[3] McKenna, S., Henry Riche, N., Lee, B., Boy, J., & Meyer, M. (2017). Visual Narrative Flow: Exploring Factors Shaping Data Visualization Story Reading Experiences. *Computer Graphics Forum*, 36(3), 377–387. <https://doi.org/10.1111/cgf.13195>

[4] Cohn, N. (2014). The architecture of visual narrative comprehension: The interaction of narrative structure and page layout in understanding comics. *Frontiers in Psychology*, 5(JUL), 1–9. <https://doi.org/10.3389/fpsyg.2014.00680>

[5] Cohn, N., Paczynski, M., Jackendoff, R., Holcomb, P. J., & Kuperberg, G. R. (2012). (Pea)nuts and bolts of visual narrative: Structure and meaning in sequential image comprehension. *Cognitive Psychology*, 65(1), 1–38. <https://doi.org/10.1016/j.cogpsych.2012.01.003>